

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE AS FOLLOWS:

1. A method for the modulation of cellular activity of tissue and cells expressing a high affinity cell-surface receptor for a form of hyaluronic acid such as an adhesion molecule (for example, ICAM-1, HARLEC and CD44) and/or Regulatory molecule (for example, RHAMM) of a human, the method comprising the administration of a non-toxic effective amount of a form of hyaluronic acid (for example, hyaluronic acid, a pharmaceutically acceptable salt thereof, [for example, sodium hyaluronate having a molecular weight less than 750,000 daltons for example, 225,000 daltons], and/or molecular weight fractions of a form of hyaluronic acid, for example, sodium hyaluronate, homologues, analogues, derivatives, complexes, esters, fragments and/or sub units of hyaluronic acid and/or combinations thereof) and/or a molecule which mimics the forms of hyaluronic acid aforesaid in respect of their ability to bind to the same receptors as the form of hyaluronic acid, to a human to modulate cellular activity of tissues and/or cells expressing such high affinity cell-surface receptor such as an adhesion molecule in the human body, in a pharmaceutical excipient tolerable by the human (for example, sterile water).
2. The method of Claim 1 further comprising a therapeutically effective non-toxic amount of a medicine (drug) or therapeutic agent for the treatment of the disease and for condition.
3. The method of Claim 2 wherein the medicine (drug) and/or therapeutic agent may comprise an agent selected from a free radical scavenger (for example ascorbic acid (Vitamin C)), an anti-cancer agent, chemotherapeutic agent, anti-viral agents for example a nonionic surfactant, e.g. nonoxynol-9 [nonylphenoxy polyethoxy ethanol] found in DelfenTM contraceptive cream, and anionic surfactants (e.g. cetyl pyridinium chloride) and cationic surfactants (e.g. benzalkonium chloride), non-steroidal anti-inflammatory drugs (NSAID) for example indomethacin, naproxen and (+/-) tromethamine salt of ketorolac (sold

under the trademark ToadolTM) and steroidal anti-inflammatory drugs, anti-fungal agent, detoxifying agents (for example for administration rectally in an enema), analgesic, bronchodilator, anti-bacterial agent, antibiotics, drugs for the treatment of vascular ischemia (for example diabetes and Berger's disease), anti-body
5 monoclonal agent, minoxidil for topical application for hair growth, diuretics (for example furosemide (sold under the trademark LasixTM), immunosuppressants (for example cyclosporins), lymphokines (such as interleukin - 2 and the like), or alpha-and-B-interferon.

4. Use of a form of hyaluronic acid, for example, hyaluronic acid, a
10 pharmaceutically acceptable salt thereof (for example, sodium hyaluronate having a molecular weight less than 750,000 daltons, for example, 225,000 daltons), molecular fractions thereof, homologues, analogues, derivatives, complexes, esters, fragments and/or subunits of hyaluronic acid and/or combinations thereof and/or a molecule which mimics the forms of hyaluronic acid in respect of their
15 ability to bind to the same receptors as the form of hyaluronic acid to modulate cellular activity of tissues and/or cells expressing a high affinity cell-surface receptor for a form of hyaluronic acid in the human body.

5. The use of Claim 4 further comprising a drug in an effective non-toxic amount.

20 6. The use of Claim 5 wherein the drugs may comprise an agent selected from a free radical scavenger (for example ascorbic acid (Vitamin C)), an anti-cancer agent, chemotherapeutic agent, anti-viral agents for example a nonionic surfactant, e.g. nonoxynol-9 [nonylphenoxy polyethoxy ethanol] found in DelfenTM contraceptive cream, and anionic surfactants (e.g. cetyl pyridinium
25 chloride) and cationic surfactants (e.g. benzalkonium chloride), non-steroidal anti-inflammatory drugs (NSAID) for example indomethacin, naproxen and (+/-) tromethamine salt of ketorolac (sold under the trademark ToadolTM) and steroidal anti-inflammatory drugs, anti-fungal agent, detoxifying agents (for example for administration rectally in an enema), analgesic, bronchodilator, anti-bacterial

agent, antibiotics, drugs for the treatment of vascular ischemia (for example diabetes and Berger's disease), anti-body monoclonal agent, minoxidil for topical application for hair growth, diuretics (for example furosemide (sold under the trademark LasixTM), immunosuppressants (for example cyclosporins),
5 lymphokynes (such as interleukin - 2 and the like), or alpha-and-B-interferon.

7. A method of preventing a disease and/or condition, the method comprising administering an effective non-toxic amount of a form of hyaluronic acid (for example, hyaluronic acid, a pharmaceutically acceptable salt thereof, [for example, sodium hyaluronate having a molecular weight less than 750,000 daltons
10 for example, 225,000 daltons] molecular weight fractions of a form of hyaluronic acid, for example, sodium hyaluronate, homologues, analogues, derivatives, complexes, esters, fragments and/or subunits of hyaluronic acid and/or combinations thereof and/or a molecule which mimics the forms of hyaluronic acid aforesaid in respect of their ability to bind to the same receptors as the hyaluronic
15 acid, to a human to modulate cellular activity of tissues and/or cells expressing a high affinity cell-surface receptor for a form of hyaluronic acid in the human body to thereby prevent a disease or condition.

8. The method of Claim 7 further comprising drugs to assist to prevent a disease or condition administered with the form of hyaluronic acid (HA).

9. A dosage amount of a pharmaceutical composition is provided for the modulation of cellular activity of tissue and cells expressing a high affinity cell-surface receptor for a form of hyaluronic acid (for example, ICAM-1, HARLEC, CD44, and RHAMM) of a human, the dosage amount comprising a non-toxic effective amount of a form of hyaluronic acid (for example, hyaluronic acid, a
25 pharmaceutically acceptable salt thereof, [for example, sodium hyaluronate having a molecular weight less than 750,000 daltons for example, 225,000 daltons], molecular weight fractions of a form of hyaluronic acid, for example, sodium hyaluronate, homologues, analogues, derivatives, complexes, esters, fragments and/or sub units of hyaluronic acid and/or combinations thereof) and/or a molecule

which mimics the forms of hyaluronic acid aforesaid in respect of their ability to bind to the same receptors as the hyaluronic acid, to a human to modulate cellular activity of tissues and/or cells expressing a high affinity cell-surface receptor for a form of hyaluronic acid in the human body, in a pharmaceutical excipient tolerable
5 by the human (for example, sterile water).

10. The dosage amount of Claim 9 further comprising an effective non-toxic amount of a medicine (drug) or therapeutic agent for the treatment of the disease and for condition accompanying the form of hyaluronic acid.

11. A dosage amount of a pharmaceutical composition comprising:

- 10 i) a medicinal and/or therapeutic agent in a non-toxic therapeutically effective amount to treat a disease or condition;
- 15 ii) a non-toxic therapeutically effective amount of a form of hyaluronic acid (for example, hyaluronic acid, a pharmaceutically acceptable salt thereof, [for example, sodium hyaluronate having a molecular weight less than 750,000 daltons, for example, 225,000 daltons], molecular weight fractions of a form of sodium hyaluronate, homologues, analogues, derivatives,
20 complexes, esters, fragments and/or sub units of hyaluronic acid and/or combinations thereof) and/or a molecule which mimics the forms of hyaluronic acid aforesaid in respect of their ability to bind to the same receptors as the form of hyaluronic acid, to a human to modulate cellular activity of tissues and/or cells
25 expressing a high affinity cell-surface receptor for a form of hyaluronic acid in the human body, and
- iii) a pharmaceutically tolerable excipient (for example, sterile water);

wherein component (ii) is in such form that when the dosage amount of the pharmaceutical composition is applied, component (ii) is available to modulate the cellular activity of tissue and cells expressing a high affinity cell-surface receptor for a form of hyaluronic acid (for example, ICAM-1, HARLEC, CD44 and RHAMM) of a human by for example, binding with the receptor for the form of hyaluronic acid and component (ii) If a form of hyaluronic acid is immediately available to transport component (i) in the body or into the skin as the case may be.

12. The dosage amount of Claim 11 wherein the suitable medicines (drugs) and therapeutic agents may comprise for example, a free radical scavenger (for example ascorbic acid (Vitamin C)), an anti-cancer agent, chemotherapeutic agent, anti-viral agents for example a nonionic surfactant, e.g. nonoxynol-9 [nonylphenoxy polyethoxy ethanol] found in DelfenTM contraceptive cream, and anionic surfactants (e.g. cetyl pyridinium chloride) and cationic surfactants (e.g. benzalkonium chloride), non-steroidal anti-inflammatory drugs (NSAID) for example indomethacin, naproxen and (+/-) tromethamine salt of ketorolac (sold under the trademark ToadolTM) and steroidal anti-inflammatory drugs, anti-fungal agent, detoxifying agents (for example for administration rectally in an enema), analgesic, bronchodilator, anti-bacterial agent, antibiotics, drugs for the treatment of vascular ischemia (for example diabetes and Berger's disease), anti-body monoclonal agent, minoxidil for topical application for hair growth, diuretics (for example furosemide (sold under the trademark LasixTM), immunosuppressants (for example cyclosporins), lymphokynes (such as Interleukin - 2 and the like), alpha-and-B-interferon, and the like.

13. A container comprising multiple dosage amounts of Claims 9, 10, 11, or 12 from which individual dosage amounts may be taken.

14. Use of:

- i) a medicinal and/or therapeutic agent in a non-toxic therapeutically effective amount to treat a disease or

condition;

- 5 ii) a non-toxic therapeutically effective amount of a form of
hyaluronic acid (for example, hyaluronic acid, a
pharmaceutically acceptable salt thereof, [for example,
sodium hyaluronate having a molecular weight less than
750,000 daltons, for example, 225,000 daltons],
molecular weight fractions of a form of sodium
hyaluronate, homologues, analogues, derivatives,
complexes, esters, fragments and/or sub units of
10 hyaluronic acid and/or combinations thereof) and/or a
molecule which mimics the forms of hyaluronic acid
aforesaid in respect of their ability to bind to the same
receptors as the form of hyaluronic acid, to a human to
modulate cellular activity of tissues and/or cells
15 expressing a high affinity cell-surface receptor for a form
of hyaluronic acid in the human body, and
- iii) a pharmaceutically tolerable excipient (for example,
sterile water);

 in the manufacture of a pharmaceutical composition for the
20 modulation of cellular activity of tissue and cells expressing a high affinity cell-
surface receptor for a form of hyaluronic acid wherein component (ii) is in such form
that when the dosage amount of the pharmaceutical composition is applied,
component (ii) is available to modulate the cellular activity of tissue and cells
expressing a high affinity cell-surface receptor for a form of hyaluronic acid (for
25 example, ICAM-1, HARLEC, CD44 and RHAMM) of a human by for example,
binding with the receptor for the form of hyaluronic acid and component (ii) if a form
of hyaluronic acid is immediately available to transport component (i) in the body or
into the skin as the case may be.

15. The use of claim 14 wherein the modulation of cellular activity of

- 43 -

2156013

tissue and cells is for the treatment or prevention as the case may be of one of the diseases or conditions needing treatment or prevention, selected from:

- (i) a cold;
- (ii) a stroke;
- 5 (iii) inflammatory processes
- (iv) fibrosis
- (v) oncogene control.

16. The method of claim 1 or 2 wherein the modulation of cellular activity of tissue and cells is for the treatment or prevention as the case may be of one of
10 the diseases or conditions needing treatment or prevention, selected from:

- (i) a cold;
- (ii) a stroke;
- (iii) inflammatory processes
- (iv) fibrosis
- 15 (v) oncogene control.

17. The use of claim 4 or 5 wherein the modulation of cellular activity of tissue and cells is for the treatment or prevention as the case may be of one of the diseases or conditions needing treatment or prevention, selected from:

- (i) a cold;
- 20 (ii) a stroke;
- (iii) inflammatory processes
- (iv) fibrosis
- (v) oncogene control.

18. The method of claim 7 or 8 wherein the disease and/or condition to be
25 prevented is selected from:

- (i) a cold
- (ii) a stroke
- (iii) inflammatory processes
- (iv) fibrosis

- 44 -

2156013

- (v) cancer and metastases
- (vi) cancer and metastases by oncogene control.